

Appl. No : 10/053241  
Filed : January 16, 2002

#### REMARKS

With the entry of this Amendment, Claims 1-30, 33 and 36-49 are pending in the present application. As indicated above, Claims 3, 30 and 40-42 are amended, Claims 31, 32, 34 and 35 are cancelled without prejudice, and new Claims 43-49 are added. Applicant reserves the right to pursue the subject matter of the cancelled claims in subsequent continuing applications.

#### Allowable Subject Matter

Applicant gratefully notes the allowance of Claims 1-29. However, Applicant respectfully disagrees with the Examiner's reasons for allowance to the extent that there is any implication that the patentability of the claims rests on the recitation of a single feature, because it is the combination of features that makes the claims patentable.

#### Amendments to the Claims

Claim 3 has been amended to read more closely on a preferred embodiment. Claims 30 and 40-42 have been amended as indicated above in order to correct typographical errors therein. Although amendments have been made, no acquiescence or estoppel is or should be implied thereby. Rather, the amendments are made only to correct typographical errors and/or to expedite prosecution of the present application.

Claims 31, 32, 34 and 35 have been cancelled without prejudice, and new Claims 43-45 have been added to conform the subject claims to claims as-filed in a related PCT application No. PCT/CA03/00059. New independent Claim 46 recites limitations directed to an embodiment that is shown, for example, in Figures 6(a) and 6(b) of the present application. Applicant respectfully submits that Claim 46 is not anticipated or rendered obvious by the prior art of record. New dependent claims 47-49 have been added to more specifically claim embodiments that were disclosed in the as-filed specification, for example, at page 12 lines 4-26. No new matter has been added.

#### 35 U.S.C. § 112, Second Paragraph

A number of claims were rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Applicant submits that the correction of the typographical error in Claim 30 makes the phrase "an electrically and ionically conductive ceramic material" clear and definite.

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Rejections under 35 U.S.C. § 102 and § 103

Claims 30-32, 34-39, 41 and 42 were rejected under 35 U.S.C. § 102(e) as being anticipated by Sammes et al (US 2002/0028367) and/or Song et al (US 6,436,565), and Claims 33 and 40 were rejected as being unpatentable under 35 U.S.C. § 103(a) over Sammes or Song in view of Kendall (US 5,190,834). Applicant respectfully traverses each of the Examiner's rejections and each of the Examiner's assertions regarding what the prior art shows or teaches.

With respect to Examiner's rejections under 35 U.S.C. 102(e) and 103(a) for product claims 30-42, the Examiner states that "recitations of how components were made are treated under product-by-process practice ... and are thus not given patentable weight, since they are process limitations in product claims."

Claims 30-42, as presented above, all claim structures comprising an electrodeposition-formed element having a composition that includes an electrically conductive metal material and an ionically conductive ceramic material. Thus, these claims include limitations that are more than simple product-by-process limitations.

Moreover, as discussed in M.P.E.P. 2113, the structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product. See for example, *In re Garnero*, 412, F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979), in which the court noted that certain terms which refer to manufacturing processes (e.g. "welded," "intermixed," etc.) are capable of construction as structural limitations.

Applicant respectfully submits that the term electrodeposition-formed as used in the Claims 30-42 implies structural differences which are not anticipated or rendered obvious by the prior art of record. To illustrate the structural differences imparted to electrodeposition-formed electrodes, Applicant attaches, in Appendix B, scanning electron micrographs (SEMs) of electrodeposition-formed nickel based solid oxide fuel cell (SOFC) anodes, namely:

Fig. 1 shows a nickel anode formed by metal electrodeposition (MED);

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Fig. 2 shows a nickel anode formed by composite electrodeposition (CED) in which graphite additives have been combusted away during sintering;

Fig. 3 shows a nickel zirconia cermet anode formed by CED; and

Fig. 4 shows a nickel zirconia cermet formed by CED in which graphite additives have been combusted away during sintering.

In Appendix C, Applicant also encloses FIGS. 5-12, which show SEMs of typical SOFC anodes made by conventional processing methods. It is clear from a comparison of the SEMs shown in Figs. 1-4 and the SEMs shown in Figs. 5-12, that the microstructure of an anode formed by electrodeposition as claimed in subject claims 30-42 is markedly different from the microstructure of an anode formed by conventional methods. In particular, the grain size in electrodeposition-formed electrodes is much larger than the grain size in conventionally-formed electrodes.

Therefore, Applicant submits that the attached SEMs show that the structures implied by the limitation, "electrodeposition-formed" in claims 30-42 are unique and distinguishable from electrode structures made by conventional processes. Since the fuel cells disclosed in the cited prior art, namely, Sammes et al. (US 2002/0028367), Song et al. (US 6,436,565) and Kendall (US 5,190,834) disclose electrodes made by conventional techniques such as extrusion, the cited prior art does not anticipate or render obvious the unique structures recited in Claims 30-42.

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CONCLUSION

The undersigned has made a good faith effort to respond to all of the rejections and objections in the present application and to place the claims into condition for allowance. Nevertheless, if any issues remain which can be resolved by telephone, the Examiner is respectfully requested to call Applicant's representative at the number indicated below in order to resolve such issues promptly.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 2/10/04

By: 

Lang J. McHardy  
Registration No. 50,591  
Agent of Record  
Customer No. 20,995  
Phone: (805) 547-5584

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